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DISA MLS Thin Client

LCDR Edward G. Bryant
DISA/API4
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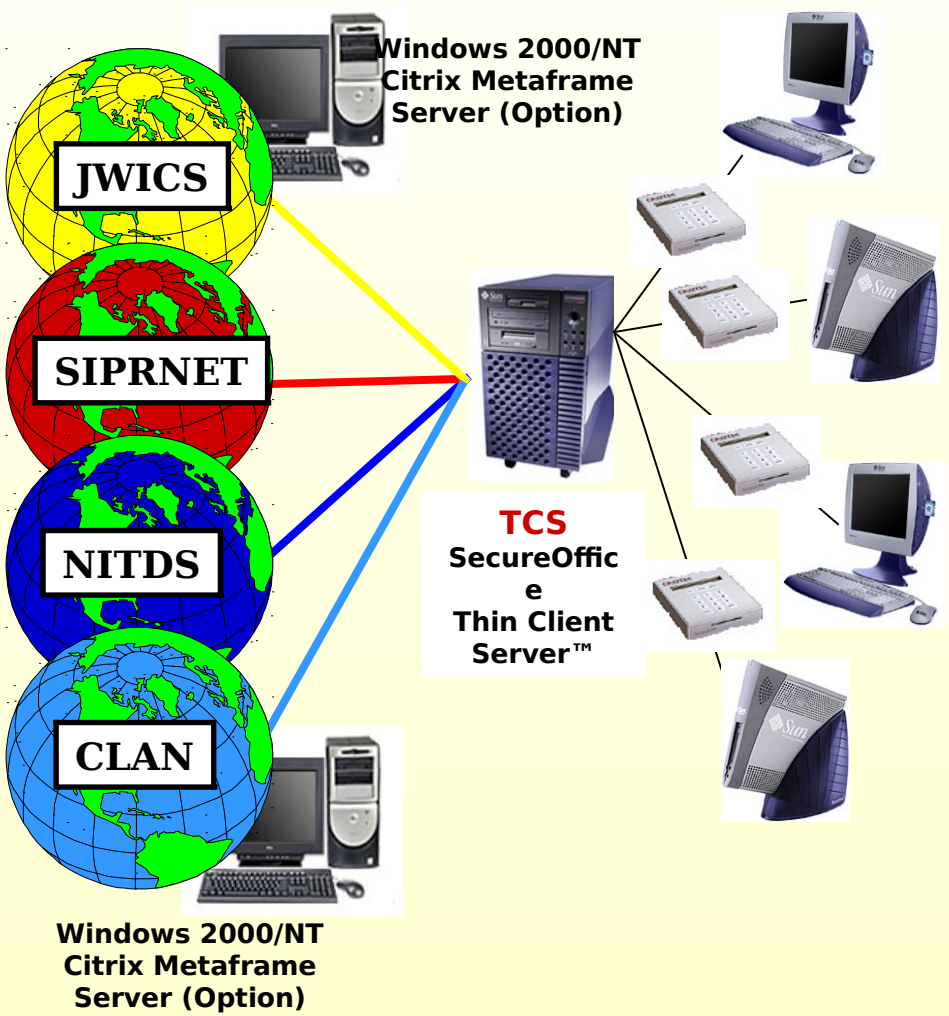
Agenda

- Overview
- Functional
- Security
- Demonstration
- Summary

MLS Thin Client Architecture

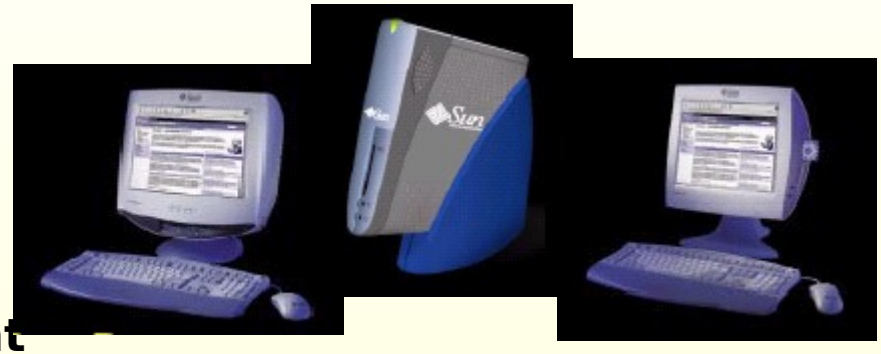


Features

- Sun SunRay Appliances (Ultra Thin Clients) execute applications simultaneously (at multiple classification levels) via SecureOffice Thin Client Server™:
  - Full Microsoft Windows 2000/NT application and network functionality via Citrix MetaFrame Server
  - E-mail, web browsing, and collaborative planning
  - Sun StarOffice
  - Sun SunForum
  - Trusted Relabeler™ Application
- Simultaneous access to resources and legacy servers on multiple classified networks
- Can integrate with Cryptek encryption devic
  - Provides encrypted path to distant clients

MLS Thin Client
Hardware

- **Appliance (Thin Clients)**
  - Built-in smart card reader
  - 4 USB ports
  - 100 MB Ethernet
  - Inexpensive-Very small footprint
  - Low Power-Energy star compliant



- **Session Server**
  - SecureOffice Thin Client Server
  - Trusted Solaris 8 &
    SunRay Session Server 1.3
  - Standard Sparc/Solaris server
  - 1-64 processors

Functional Overview

- Ops/Intelligence Workstation / Trusted Workstation / SecureOffice follow-on product (upgrade)
  - Based on previously accredited technology and proven CONOPS
  - Over 200 systems fielded and accredited
- Secure simultaneous connections to all LANs (at different security levels) from a single terminal via a single thin client terminal
  - Web Browsing, Email, etc.
  - Applications can execute simultaneously at all classification levels
- Provides ability to securely pass information between classification levels
- Full MS Windows functionality at multiple levels with the use of Citrix MetaFrame Servers -- obviates the need for multiple PCs on the desktop
- UNIX application support -- point-and-click, drag-and-drop interface

Functional Overview

- Based on Sun Microsystems SunRay Server/Client architecture
  - Reduced cost combined with reduced, administration, footprint, power, and maintenance/logistics tail
  - Centralized management (including MS Windows servers)
- Hot desk session mobility
- No client desktop maintenance or administration
- Increased desktop security
  - Diskless clients
  - Data encrypted to the desktop (with the use of Cryptek products)
- TCS provided GUI Administration Tools for Trusted Solaris management

SecureOffice™ Screenshot

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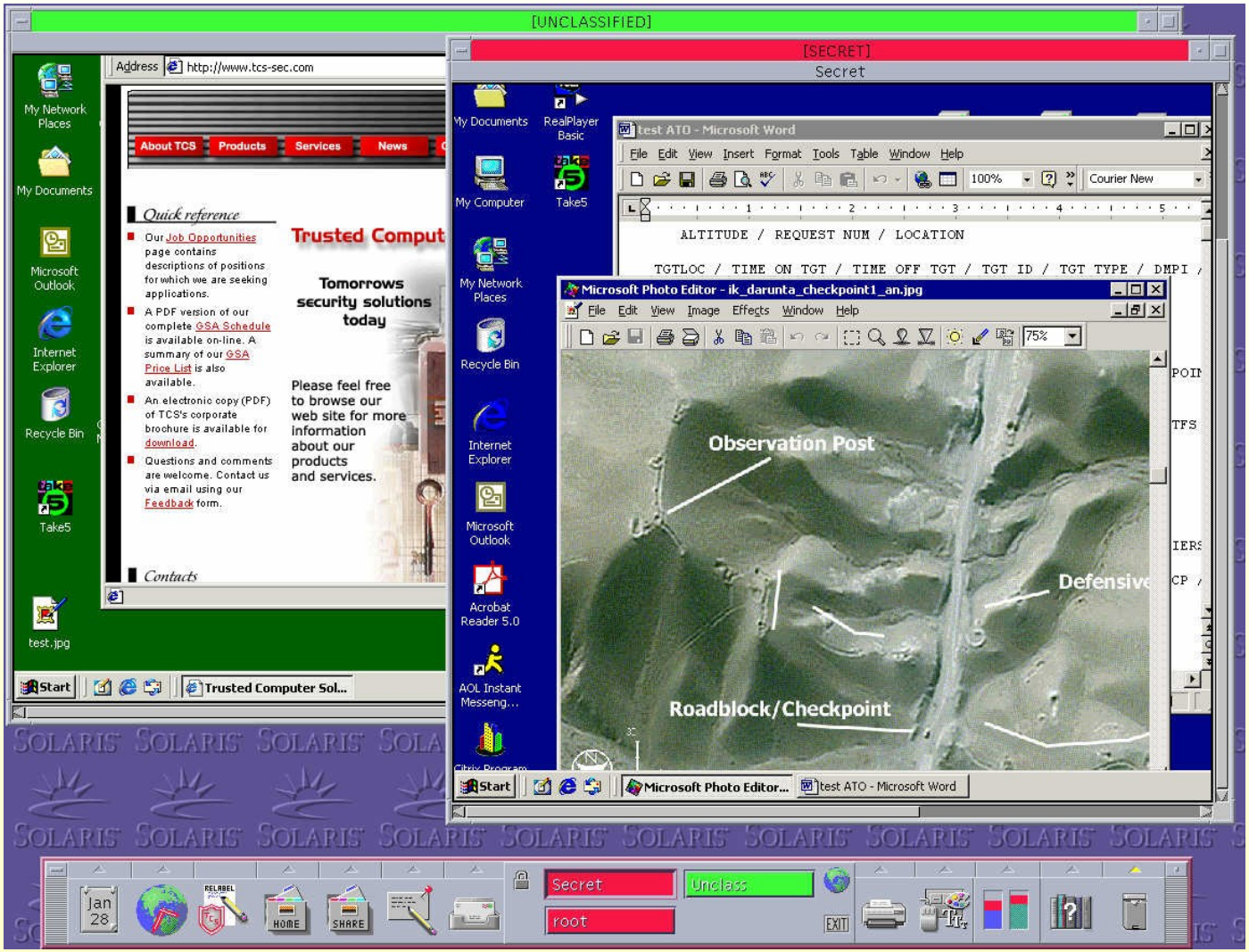
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SHARE

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SecureOffice™ Screenshot

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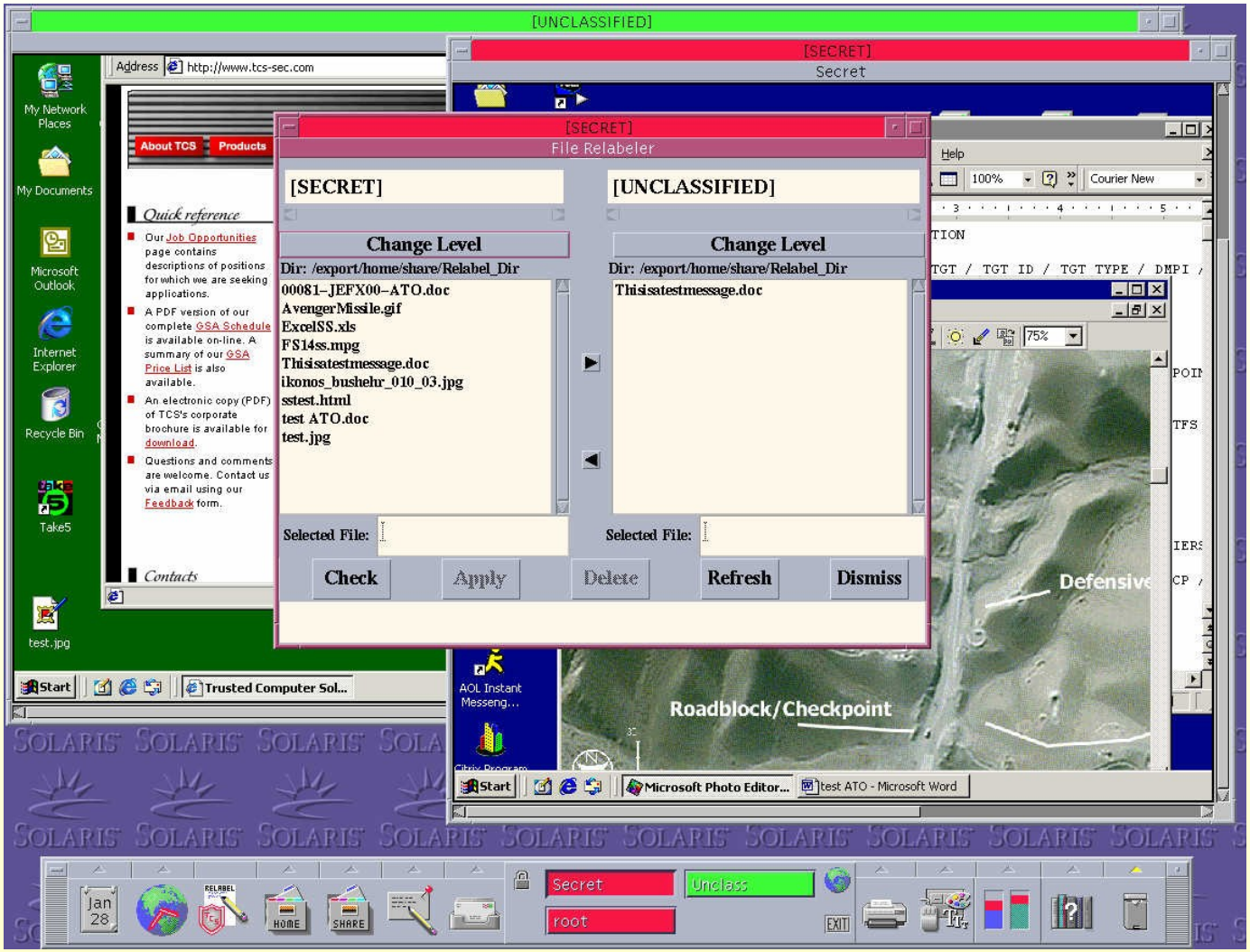

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SECURITY OVERVIEW

- Upgrade based upon TCS' Ops/Intelligence Workstation / Trusted Workstation / SecureOffice line of products
  - DIA Accredited and NSA profiled baseline
  - Carried over verified software routines, secure configuration parameters, and software (where applicable)
  - Similar high level system architecture, connectivity, and CONOPS
- Executes on Sun Microsystems' Trusted Solaris 8
  - Common Criteria evaluated at EAL 4 level
  - Network and file/data labeling
  - Elimination of "superuser root" userid
  - User profiles incorporating privileges and authorizations
  - User profiles limit access to commands, desktop, and programs
- Specialized TCS GUI Admin tools eliminate insecure configuration caused by hand editing security tables
- Security-enhanced networking kernel that provides IP filtering capabilities

SECURITY OVERVIEW
(continued)

- IP filtering on all interfaces (built-in firewall)
  - Automatic configuration via TCS Network Interface Tool
- IP Forwarding disabled
- Restricted networking by configuration files, trusted networking tables, and firewall rules
- No remote user access allowed -- precludes penetration
- All Windows based application execute on a System-High Citrix MetaFrame servers

SECURITY OVERVIEW
(continued)

- Simple-to-use User Interface
  - Icon oriented actions
  - Drag-and-drop support
  - No UNIX commands necessary / No UNIX command line access
- Countermeasures engineered into system based upon previous vulnerability assessments by NSA and DIA
- Configuration management of all developed and integrated software
- A COTS product planned for use by a number of organizations
  - Assures compatibility and consistency between organizations
  - Full vendor support
  - A government and industry partnership

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System Administration

- GUI based Administration tools prevent inadvertent insecure settings by Administrator
- Centralized administration
- Simple TCS GUI tools for installation and configuring:
  - System Accred Range
  - NIS+ server/client
  - External Network Routes
  - Dirty Word Configuration
  - Network Interfaces
  - Remote Hosts / Nets
  - DNS Servers
- Use of Sun developed tools for other tasks, such as new user setup, printer and audit configuration

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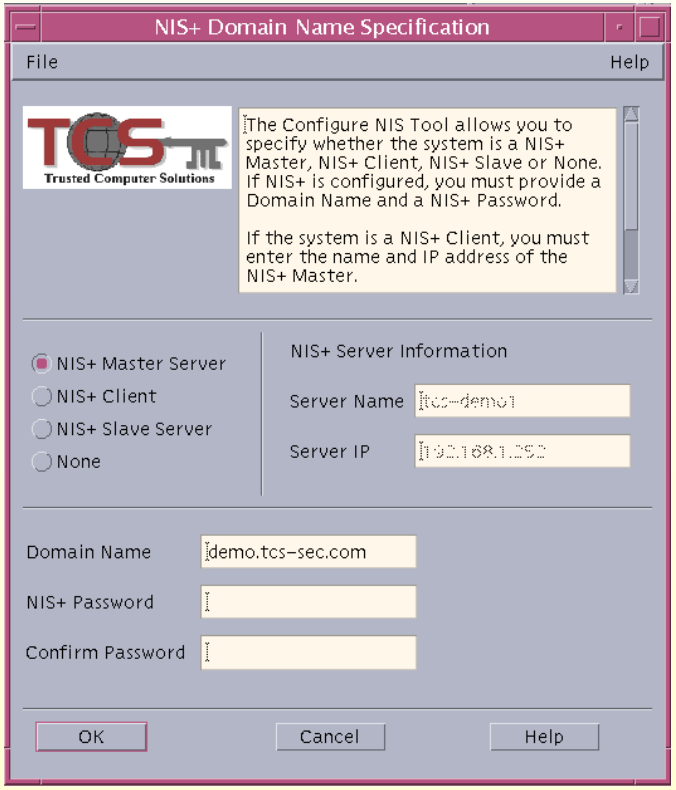
Sample System Administration Tools


NIS+ Domain Name Specification
File
Help
Trusted Computer Solutions
The Configure NIS Tool allows you to specify whether the system is a NIS+ Master, NIS+ Client, NIS+ Slave or None. If NIS+ is configured, you must provide a Domain Name and a NIS+ Password.
If the system is a NIS+ Client, you must enter the name and IP address of the NIS+ Master.
NIS+ Master Server
NIS+ Client
NIS+ Slave Server
None
NIS+ Server Information
Server Name
tcs-demo1
Server IP
Domain Name
demo.tcs-sec.com
NIS+ Password
Confirm Password
OK
Cancel
Help

SECURITY OVERVIEW

(continued)

- Access to Administrative Configuration Tools are restricted to Administrative Roles
- Trusted GUI-based File Relabeler
  - Executes on Trusted Solaris
  - Dirty Word Search mandatory on all files (site configurable)
  - Dirty Word Search incorporated into non-text files (MS Word, PowerPoint, Excel, NITF image files (meta data search), GIF, JPEG, etc.)
  - StarOffice allows for previewing of files in MS Office format

SecureOffice Thin Client™

Protected Client LAN

- Can support VPNs to thin clients with Cryptek encryption devices
  - Provides data protection to clients outside secure spaces
    - Data protection for LANs traversing non-secure “gray” areas in the ship
  - Enabled with smart cards
    - Cryptek is working towards an integrated Cryptek/SunRay Client single reader solution
    - Beta version may be available for demonstration
  - Type II encryption

Summary

- Thousands of man-hours have been expended to make SecureOffice a secure, accreditable COTS solution
- Leveraged off of valuable lessons-learned from OIW-TWS development, certification, accreditation, and system fieldings
- Periodic security profiling techniques used during design and development to implement countermeasures
- COTS aspect of SecureOffice ensures commonality of fielded systems
  - Lessens time required by DAA to become proficient
  - Allows for Certification Testing of “deltas” vs. full formal Certification Test of entire system
  - Ensures full commercial support to sites by COTS vendor